

In the Claims

We claim:

1 (original). An isolated polynucleotide encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof.

2 (original). The polynucleotide according to claim 1, wherein said polynucleotide encodes a 2-phenylethanol dehydrogenase of tomato.

3 (currently amended). The polynucleotide according to claim 2, wherein said 2-phenylethanol dehydrogenase has an amino acid sequence shown in SEQ ID NO: 2, or said 2-phenylethanol dehydrogenase has sequence identity of 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, or 99% with the amino acid sequence shown in SEQ ID NO: 2.

4 (currently amended). The polynucleotide according to claim 3, wherein said polynucleotide comprises a nucleotide sequence shown in SEQ ID NO: 1, or said polynucleotide comprises a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence shown in SEQ ID NO: 1, or the complement thereof.

5 (original). The polynucleotide according to claim 1, wherein said polynucleotide encodes a 2-phenylethanol dehydrogenase of petunia.

6 (currently amended). The polynucleotide according to claim 5, wherein said 2-phenylethanol dehydrogenase has the ~~nucleotide~~amino acid sequence shown in SEQ ID NO: 11, or said 2-phenylethanol dehydrogenase has sequence identity of 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, or 99% with the amino acid sequence shown in SEQ ID NO: 11.

7 (currently amended). The polynucleotide according to claim 6, wherein said polynucleotide comprises the nucleotide sequence shown in SEQ ID NO: 10, or said polynucleotide comprises a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence shown in SEQ ID NO: 10, or the complement thereof.

8 (original). An isolated polynucleotide encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof.

9 (original). The polynucleotide according to claim 8, wherein said polynucleotide encodes a phenylalanine decarboxylase of tomato.

10 (currently amended). The polynucleotide according to claim 9, wherein said phenylalanine decarboxylase has an amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, or said phenylalanine decarboxylase has sequence identity of 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, or 99% with the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13.

11-13 (canceled).

14. (currently amended). The polynucleotide according to claim 9, wherein said polynucleotide comprises a nucleotide sequence shown in SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, or SEQ ID NO: 12, SEQ ID NO: 6, SEQ ID NO: 8, or SEQ ID NO: 12, or said polynucleotide comprises a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence shown in SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, or SEQ ID NO: 12, or the complement thereof.

15-17 (canceled).

18 (currently amended). A polynucleotide expression construct comprising:

(a) a polynucleotide sequence encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof; or

(b) a polynucleotide sequence encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof; or

(c) both a polynucleotide sequence encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof and a polynucleotide sequence encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof~~a polynucleotide sequence according to any of claims 1-17.~~

19-33 (canceled).

34 (currently amended). A cell transformed with:

(a) a polynucleotide encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof; or

(b) a polynucleotide encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof; or

(c) both a polynucleotide sequence encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof and a polynucleotide sequence encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof~~a polynucleotide according~~

~~to any of claims 1-17.~~

35 (currently amended). The cell according to claim 34, wherein said polynucleotide is provided in an expression construct according to ~~any of claims 18-33~~claim 18.

36 (currently amended). A plant, plant tissue, or plant cell transformed with or bred to contain:

(a) a polynucleotide encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof; or

(b) a polynucleotide encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof; or

(c) both a polynucleotide sequence encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof and a polynucleotide sequence encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof~~a polynucleotide according to any of claims 1-17.~~

37-46 (canceled).

47 (currently amended). A method for providing a plant with increased flavor or fragrance, said method comprising incorporating in said plant:

(a) a polynucleotide encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof; or

(b) a polynucleotide encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof; or

(c) both a polynucleotide sequence encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof and a polynucleotide sequence encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof

~~one or more polynucleotides according to any of claims 1-17 and expressing the polypeptide encoded by said polynucleotide~~one or more polynucleotides.

48-57 (canceled).

58 (currently amended). A transgenic plant, plant tissue, or plant cell, wherein said plant, plant tissue or plant cell comprises incorporated in the genome of said plant, plant tissue, or plant cell:

(a) a polynucleotide encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof; or

(b) a polynucleotide encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof; or

(c) both a polynucleotide sequence encoding a plant 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof and a polynucleotide sequence encoding a plant phenylalanine decarboxylase, or an enzymatically active fragment thereof~~a polynucleotide according to any of claims 1-17~~
~~incorporated in the genome of said plant, plant tissue, or plant cell.~~

59-67 (canceled).

68 (currently amended). An isolated plant enzyme, wherein said enzyme is a 2-phenylethanol dehydrogenase enzyme, or an enzymatically active fragment thereof, or a phenylalanine decarboxylase enzyme, or an enzymatically active fragment thereof.

69-93 (canceled).